A Split Temporal System in Atayal

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Morphologically tenseless languages, although unified by the absence of overt tense inflection, are heterogeneous in receiving a tensed analysis or a tenseless analysis of varied nature. This paper investigates temporality in Atayal (Austronesian), an underrepresented language spoken in northern Taiwan. Although Atayal is morphologically tenseless, temporal reference is either restricted to a non-future interval or unrestricted at all, depending on voice selection (i.e., four-way case/agreement on the verb, similar to other Philippine-type languages) as well as the presence/absence of an overt aspect. I provide evidence that the unrestricted temporal interpretation in bare non-actor-voice sentences cannot be reduced to planned contexts, and that the overall temporal interpretation is restricted, rather than being induced by, an aspect or mood category. For both empirical and conceptual reasons, I conclude that Atayal has an independent temporal system, and offer a formal analysis. The finding contributes to the ongoing debate on analyzing morphologically tenseless languages.

Atayal temporal reference. The following temporal data is collected by using temporal adverbs and contexts that constrain temporal references (see Cover and Tonhauser 2015). Bare sentences in the actor voice and those containing an overt aspect in Atayal can be interpreted as either past or present, but not future, (1-2); future reference requires substituting the actor voice form (**M-*) with *p-*, (3), or adding *p-* or the future modal *musa'*, (4). This pattern contrasts with bare sentences in a non-actor voice, which allow for future interpretations without extra marking, (5-6) (cf. Egerod 1965, Huang 1993). The exactly same pattern recurs in clauses embedded under attitude and report verbs (data are omitted here for the reason of space). Note that present episodic readings are absent across aspectually unmarked sentences, irrespective of voice, (1b) and (5-6), which I analyze as due to the incompatibility of a neutral aspect (in the sense of Smith 1991) and the instantaneous present tense, much akin to the absence of present perfective in English (cf. Bennett and Partee 1978). Another note is that the voice interference in tense holds for intransitive and transitive predicates.

(1) a. m-'uy=saku' la.
AV-tired=1S.ABS PRT
'I was/am/#will be tired.'

b. m-nbuw hiya'.
av-drink 3s.n
'He drank/#will drink.'

(2) a. cyux m-'abi'.
PROG.DIST AV-sleep
'He was/is/#will be sleeping.'

b. wal=nya' kblay-un blihun la.
PRF=3S.ERG make-PV door PRT
'He had/has/#will have fixed the door.'

(3) a. *p*-k-'uy=saku' la.
FUT.AV-STV-tired=1S.ABS PRT
'I will be tired.'

b. *p*-nbuw hiya'.
FUT.AV-drink 3S.N
'He will drink.'

(4) a. *p*-k-cyux m'abi' *kira'*.
FUT-STV-PROG.DIST AV-sleep later.today
'He will be sleeping later.'

b. *musa'*=nya' wal kblay-un blihun la.
FUT=3S.ERG PRF make-PV door PRT
'He will have fixed the door (by then).'

(5) thaygal-an ni Tali' laqi' qasa.
bully-LV ERG Tali' child that
'Tali' bullied/will bully that kid.'

(6) kyal-un=su=nya' maha …
speak-PV=2S.ABS=3S.ERG CMP
'He told/will tell that …'

Not conditioned by aspect or mood. A tenseless analysis that relies on default temporal interpretations of Aktionsart and/or viewpoint aspect (e.g., Smith et al. 2007) cannot be extended to Atayal. Although Atayal also has certain aspect-induced tense defaults: bare eventives and perfect-marked predicates tend to be interpreted as past, while bare statives and

progressive-marked predicates receive a present reading out of the blue, they do not align with voice. Moreover, according to Smith et al., future reference always accompanies modality, and requires extra grammatical resources; this wrongly predicts that bare non-actor-voice sentences in Atayal are always interpreted as past. Telicity is not a crucial factor for Atayal either: both telic and atelic bare predicates receive a past interpretation as default, unlike what is described in, e.g., Bohnemeyer and Swift (2004) and Lin (2006). Lastly, I will show that the Atayal temporal pattern does not follow from a mood-based analysis: on one hand, *p-*, *musa'*, and bare non-actor-voice verbs are not used in any prototypical irrealis contexts except for the future; on the other, since the non-future interpretation holds for aspectually marked and unmarked predicates, which are not all in perfective, it cannot be equated with a realis category, which relies on, for instance, perfectivity (e.g., Bohnemeyer 2009).

Tenselessness and (un)restricted future time reference. Recent research has shown that morphologically tenseless languages vary in the (un)availability of future reference without grammatical marking. Languages that require overt grammatical marking for the future motivate a tensed analysis (Matthewson 2006, Cable 2016). In other languages, temporally unmarked clauses may refer to the past, present or future (Mucha 2013), or are not systematically restricted to non-future times (i.e., in some environments they can have future reference without overt marking) (Bohnemeyer 2009, Tonhauser 2011, Bochnak 2016), both types of which are argued to favour a tenseless analysis. Tonhauser and Bochnak demonstrate that in their languages, the future interpretation without overt marking arises due to independently motivated reasons such as futurates, a special conjunction, or a general constraint. Reducing the future interpretation of non-actor-voice sentences to futurates (e.g., Copley 2002) however is not a viable option for Atayal because bare non-actor-voice sentences are compatible with varied modality including intention and prediction, rather than limited to planned or scheduled events. Moreover, language-internal facts such as negation and reduplication show that the future interpretation of bare non-actor-voice verbs resembles that of those overt future markers. These considerations verify the fact that bare non-actor-voice sentences receive free temporal reference. Therefore, unlike the documented languages, Atayal temporal reference splits into a tensed and a purely tenseless pattern, which are in complementary distribution and hence predictable.

Some speculations for the role of voice. A salient issue is whether voice conditions the temporal interpretation directly or indirectly. Transitivity doesn't appear to be the factor (i.e., transitive verbs induce future reference), since transitive sentences with an overt aspect are also excluded from having a future interpretation without *p-* or *musa'*. Another direction is to look at diachronic semantic change of non-actor voices, which is unfortunately beyond the scope of this work.

The proposal. Assuming that tense is pronominal (Partee 1973, 1984), which introduces a variable over temporal intervals, tense distinction is formulated as presuppositions restricting the reference of the variable (Heim 1994, Kratzer 1998). Based on the generalization that the two temporal patterns are in complementary distribution and the fact that bare eventives in any voice advance reference time in narratives (i.e., motivating a pronominal tense), I propose that Atayal possesses two covert tenses whose use is conditioned by whether a non-actor voice is the only overt head in their complement. The tense in (7) introduces a free variable whose interpretation wholly depends on a contextually defined assignment function (Mucha 2013, Bochnak 2016), and it is used in bare non-actor-voice sentences, whereas the

tense in (8) restricts the value of a temporal variable to non-future intervals (Matthewson 2006) and is present elsewhere.

(7) $[\![\text{T}(\text{NAV})_9]\!]^{g,c} = g(9)$

(8) $[\![\text{NONFUT}]\!]^{g,c}$ = g(7), defined only if no part of g(7) is after t_c ; undefined otherwise

Concluding remarks. The Atayal temporal reference interacts, but is independent of, other grammatical components. I propose two tense variables responsible for each of the complementary patterns correlating with voice and overt aspect. Since one of the tenses is restricted to non-future references, this proposal can be deemed as a tensed analysis.

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